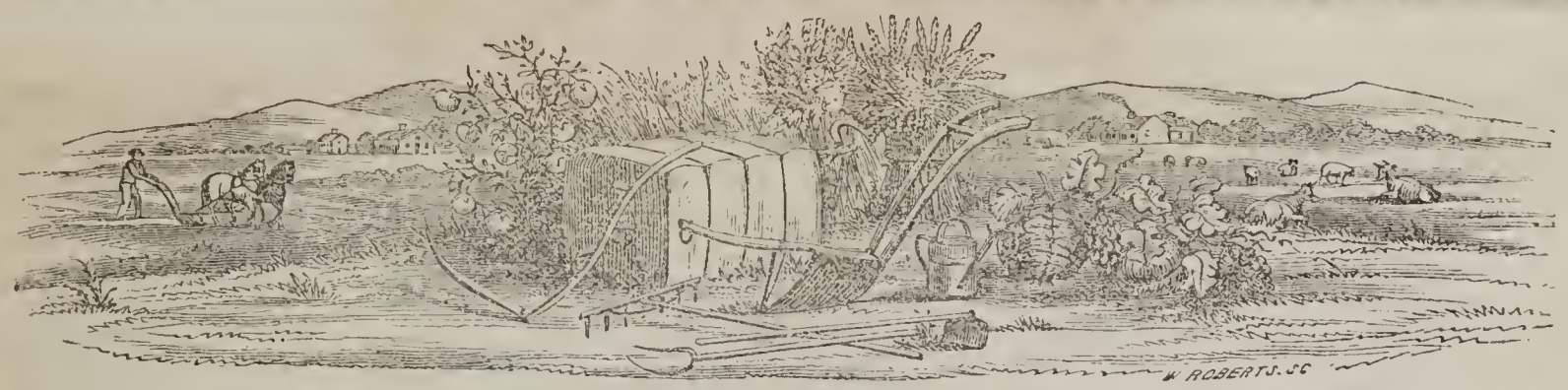

FARMER AND PLANTER.

DEVOTED TO AGRICULTURE, HORTICULTURE, MECHANICS, DOMESTIC AND RURAL ECONOMY.

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Report of the Committee on Fruit---Read before the Pendleton Farmers' Society, at its last Anniversary meeting.

Your Committee have performed the duty assigned them, with much pleasure, believing that this section is well suited to the cultivation of the various kinds of fruit, and being desirous of seeing it brought to that state of perfection, which it so well deserves. We shall feel well rewarded, if our efforts in the cause, shall be the means of enlisting that attention necessary, to the successful rearing of the many choice fruits now in our vicinity, and that the day may not be distant, when old Pendleton will be noted for her orchards.

We have to notice the present indifference to the kind cultivated and the culture. To insure good fruit, the present practice of raising from the seed, ever regardless of the kind, must be abandoned, and the more improved mode of grafting and budding adopted. While we admit that some choice kinds have been produced from seed of fine sorts, yet it will not prove so in all cases, and for that reason we recommend grafting and budding, as you are sure of the kind you desire. The present practice of raising a crop amongst fruit trees, and running the ploughs to the very trunk of the trees, we consider highly injurious. First, the roots are cut more or less, and thus they are injured; and then, the crop exhausts the land, and takes that nourishment from the trees, which they so much need, in almost every case; for where ever we meet with an orchard, we find that a field which was worn out, has been selected for that purpose. It is impossible for poor land to produce trees and cotton, corn, or some other crop. If your orchard is to be planted, give your trees nearly double the distance you would otherwise; manure them well—which should be done under any circumstances, if the land is poor—and be careful not to plant so near the trees as to affect the roots with the plough. We would recommend the following mode of culture for fruit trees: In planting them, let the holes be circular, four feet diameter, and two feet deep, and when the trees are placed therein, fill around them with good earth.—After high winds notice whether the ground has not been loosened from around the trees and trample it back; if this is not attended to, they are apt to die, as the air gets to the roots. All weeds and grass should be prevented from growing around them, and in manuring, let it be a top dressing. After the trees have grown sufficiently large to bear, they will shade the ground and of themselves check any growth around them. We consider hogs more useful in an orchard, in fruit season, than the plough and hoe, they consume all that drops, and thereby destroy a vast number of insects, which are generated in decayed fruit. There is a great error existing in crowding orchards, we will notice the distance necessary for the different trees as we speak of them.

We will now give you the mode of propagating the different kinds of fruit trees.

1st. THE CHERRY. This fruit receives no attention in this section of country, for reason, we know not how good the choice varieties are. The Morello, which is grown here, is indeed unworthy of attention; but the finer sorts, which are cultivated in the Northern States, are far superior fruit, and should be introduced amongst us. Indeed there are some of the Heart cherries growing on a farm in this neighborhood. These kinds, if raised from the seed, will grow large and make shade trees, but if budded on the Morello, will make a dwarfish tree. For rearing these we would recommend planting the seed of the Morello and budding on them. If planted in an orchard, let the trees be twenty feet apart. This fruit is liable to the depredations of the Curculio, and the tree to the knots, both of which must be treated as recommended in noticing the plum.

PLUM. This fruit is well known among us, that is, the common kind. While we would recommend the cultivating of these for the use of hogs, we would especially the fine sorts for the table, of which there are now growing in this neighborhood about twenty. These fine kinds will do well if grafted on the common, and when sufficiently large, set them out in the orchard twenty feet apart. This fruit has a destructive enemy in the Curculio, which punctures the fruit a few weeks after the blossom drops, and deposites its eggs, seldom more than one in each plum, in course of time the egg becomes a white grub, which eats its way to the stone, and as soon as it reaches it, the fruit falls. The grub then soon finds its way into the ground, and there re-

mains until spring, when it again comes forth in the form of the Curculio, to deal destruction. Having so formidable an enemy to contend with in the cultivation of this most delicious fruit, we must bring to your notice, some mode or modes of remedy. We would recommend covering the ground, around the tree as far as the limbs extend, with clay, that it may form a hard surface, and thus prevent the grub from penetrating into the ground. If this is not successful, sprinkle fine salt over the ground as far as the limbs shall extend. Should it be dissolved before fruit has fallen, apply more, it is destructive to the grub. This remedy is highly recommended by those who have tried it. The Curculio, when they make their appearance, can be caught by spreading sheets under the trees and giving the trunks of the trees some taps, which will cause them to fall, they can then be gathered up and burned. Hang bottles about the trees with sweetened water, and they will go into them and be so caught. The plum is also subject to a disease termed the knots or black gum; if allowed to spread, it will destroy the tree. We therefore recommend what is considered the most effectual remedy: take off the limb affected and burn it, which will destroy any insect that may be the cause of it. If this treatment does not seem to arrest it, root up the tree and burn.

The Peach. This much esteemed fruit, though cultivated in large quantities amongst us, yet, the qualities are mostly inferior. There are many choice kinds in this neighborhood, and they should be generally propagated. In rearing this fruit, plant the nuts of healthy trees in the fall, and in the following summer, about the month of August or September, if the plants be large enough, bud on the kind desired, and in the succeeding spring the buds will put out and form a good head, and can be set out in the orchard in the fall, let them be twenty feet apart.

The peach tree is liable to a disease called the "yellows," which a due attention to pruning, thus checking too luxuriant a growth, seems, in a measure, to prevent, and it, at the same time, forms a prettier tree, and enables it to better support its fruit. We say pruning, we mean shortening the limbs and making it form a bushy head. The yellows can be known by the tree gradually perishing, and as it is incurable, root up the victim and burn it, and let no tree be planted in the same spot for some years; it is considered contagious. The peach is also liable to be injured by the Borer, a worm which cuts around the tree, under the bark, just below the surface of the ground, by removing the earth from around the trunk and cutting away the bark that has become loose by the depredations of the Borer, it can be found.—But the most effectual remedy is the preventive: in the month of April, put about a peck of ashes around the tree, and let it remain so until the fall; it will prevent the moth from depositing its eggs, and after the season is past, spread it over the ground—no better manure—this ought to be repeated annually.

The Pear. This luscious fruit, we notice, with few exceptions, is not cultivated in this vicinity. We cannot refrain from recommending it to the particular attention of all lovers of fruit. A taste of the summer Bergamot, Bartlett, Seekel, or Doyenne, we are sure would be the strongest recommendation to their culture, but there are many others as fine as these. We doubt not, many persons who have never eaten any other kind of this fruit, than the common of this country will be surprised to hear, that there is now in cultivation, in this neighborhood, fifty different sort of the choicest. The culture of this fruit consists in planting the seeds, and when the young plants have attained a sufficient growth, bud on them the varieties which you may desire, and as they grow to the height of about seven feet, set them out in the orchard thirty feet apart. If pear seeds cannot be obtained, the apple can be used, in which case, grafting must be adopted instead of budding, and it ought to be done as near the surface of the ground as possible, as by so doing, in setting out the young tree, the ugly wound can be hid. By being so planted, the pear will put out roots for itself, which we consider an advantage. Budding the pear on the apple will not do, as the former will out grow the latter. This fruit is liable to two diseases, termed the worm blight, and the frozen sap or fire blight, the former is where a worm cuts around a limb, and thereby stops the flowing of the sap and causes it to wither and die; when this is the case, cut off the part so affected a few inches below and burn it; the latter is caused by the tree taking a fresh growth late in the summer, and is overtaken in this state by frost, which does the damage, though the sap will flow up, as usual, in the spring, and cause the shoots to put forth, yet in its reverting to pass through the woody part, it meets with this frozen sap in the form of a gummy substance, which obstructs it, and the result is, the part so affected dies. The saw must be used under this circumstance as in the former disease.—After taking off the limb, the wood will have a dark appearance if it is the fire-blight, and you must then continue cutting off until it looks healthy; otherwise, the entire tree will become affected by it and die. There is a small insect which, at times, eats the leaves; it does not seem to injure the trees; they can be destroyed by sprinkling suds water with tobacco juice on them.

The Apple. This is a universal favorite, and well deserves to be so, for it is the most hardy of all the fruit trees, bears more regularly, and can be enjoyed both summer and winter. To cultivate the apple, plant the seed, in the fall, in a rich bed, and when the young plants are about a quarter of an inch in diameter, set them out in the nursery in rows, and as they get to be about a half an inch in diameter, graft or bud. In planting the trees in an orchard, let them be distanced thirty feet apart. The apple is liable to the depredations of several insects.—One girdles the trunk of the tree as the grub does the peach, and the same treatment must be resorted to, as with the peach. The other enemies to this fruit do their injury by feeding on the leaves; they must be destroyed. As the moth, which produces these worms, flies at night, they might be destroyed by making fires about the orchard at that season. There is very little pruning necessary, only thin out such limbs as cross each other. There are upwards of two hundred different apples, of which there are forty of the choicest in cultivation, in this section of country. We are of opinion that this fruit cannot be brought to as great perfection here, as further north of us, yet, they will do well enough to encourage its culture.

The Grape. It has been tested that this fruit cannot be reared successfully here for wine making, but sufficiently so for a dessert. It can be easily propagated from the cutting or by layer. Cut the shoots, of the previous growth, about sixteen inches long, and plant to the depth of half its length; when it puts out in the spring, let only two of the buds grow, and after a while, snap off the weaker of the two shoots and the other will make the vine. The layering is performed by bending down, in the summer, a shoot of that years growth and covering a foot of it with earth. It will put out roots and can then be cut off from the old vine, and at a convenient time be dug up and planted where desired. The grape likes a rather dry soil, and to be well fed with manure, especially lime or ashes, smiths cinders are good for them. They seem to do best when trained to an arbor, and should be freely pruned every spring before the sap rises, leaving only two buds on a shoot. Of the several kinds now in cultivation, in this neighborhood, we would particularly recommend the scuppernong, as fine flavored, very hardy, and an abundant bearer. It seldom fails in a crop, as proof of this assertion, we would mention that whilst all other fruits failed last year, we saw a vine of this kind loaded with fruit.

The Fig. This fruit does not grow as well here as in a warmer climate, yet if protected in winter will thrive sufficiently to produce very good crops. It can be propagated from cuttings and suckers, likes a tolerably damp soil. It needs no pruning. To force the fruit forward, put a single drop of oil on the point of them.

The Nectarine. This fruit should have been noticed after the peach, but was neglected. The habits of the trees are the same as the peach, having been originally raised from a seed of that fruit. The tree is liable to the same disease as the peach, and must be treated as it is. The fruit is liable to be injured by the Curculio, and it must be dealt with as is the plum. We must make a few remarks in regard to the nursery. The ground should be well pulverized and made rich. The best manure for this, is rotton wood, gatherings from the wood pile and woods with ashes, mixed. The

nuts and seed must be planted in the fall in drills three feet apart, and the young plants kept free of grass and weeds. After the first years growth, they must be thinned out to the distance of about one foot, and those that are taken up, can be planted in rows at distance aforementioned.

In the foregoing, we have given you such information, on the subject of fruit culture, as we have acquired from experience and from Downing's excellent work on fruit and fruit trees of America, and which we must recommend, to all who purpose giving their attention to the orchard, as a useful companion.

STEPHEN M. WILSON, *Chm'n.*

Mixed Husbandry.---No. 2.

MESSRS. EDITORS:—I hold it essential to success in the cultivation of the soil, that we must not only make enough corn for our own use, but some to spare. It matters not if every owner of a few acres did it, it is no less necessary. The "stranger within our gates" needs refreshment, and our neighbor, though he be an inmate of a factory of Lowell or Lynn, though he grows onions in Wethersfield, must be fed, and we will be paid thereby. The growing of a bountiful supply of corn will enable us to rear our own pork, raise colts, calves and lambs, and thus add to our independence. I believe this policy pursued by the slave holding states for but two years, would settle the vexed question, and we would make laws for America. But there is a stopping place even in this. We must not run in to another extreme. Go to planting of corn. The one crop system will not do for any people.

That we may acquire an independence the most certain we must, as said, resort to a mixed husbandry—not rely upon corn to raise every thing, and our cotton for sale—we would soon see our crops increase to an amazing extent. Corn makes fat mules, strong and willing hands, large manure banks,—no others are worth a baubee, unless we smack our lips at the idea of an oyster bank, and these make cotton grow nobly.

We must use oats and wheat, perhaps barley, for winter feed of stock, we must have grass for summer feed and good hay for winter. By thus dividing our attention, we have the shot gun among blackbirds, in lieu of the rifle, which, though true to the mark, may not be in suitable hands. And further, we will be compelled to change the crops on our lands, give them an occasional respite from the ever tormenting plow. Here is a hasty outline of the proceedings I deem best to be persued in all times; and certainly we can better afford to adopt it *now*, with cotton at 12½ at present and 15 in the distance. The minutiæ are to be filled up. And whether the writer can find time to do as well as he is competent, or whether he be competent, or whether among your readers he will find help, are questions in the womb of time, and not now necessary to be touched. Let them bide their time. In the mean time, I hope certain good and true friends in that part of our loved land, who have used the "nom de guerre" of Broomsedge, Coke, &c., &c., will hold themselves ready to give a long pull, a strong pull, and a pull altogether, that we, by our united exertions, may wake up some gifted one of Carolina to lead us on to agricultural independence.

Some of the parts to constitute this whole may be here noted, that the sheet be filled. Among these may be placed good and proper tools. I do not know that I am competent to instruct, but as I only intend that my writings shall never be other than leading to enquiry, I will not hesitate.

At this writing, I do not know a solitary tool used on a farm, but what can be improved—speaking now of the country generally, and particularly as I knew the upper districts, when I was some younger. The genuine Colins' axe, or Hunt's, or Simmons' or Davis' are so far superior to those of my younger days, that no one can hesitate. The Scovell hoe is better worth the price, No. 1, $7.50; No. 2, $8; No. 3, $8.50; No. 4, $9 per dozen, New York prices, than are the old "Carolina," at nothing, and the handles thrown in. The various improved plows, for land and particular work, are in the same category—drawing prices from 75 cts. to $1 12½ cts., according to size, thirteen out of every dozen, are better than two out of the dozen, of the old ones.

I have tried probably a greater variety of implements than any other man of my means in the South. I may be accused of egotism, but if telling what I believe is truth, with an eye singly to my country's good be egotism, I brave the rebuke if I can induce improvement. I have tried wrought plows, made in my own shop—bought in this county, and from other States—the cast plow, with wrought bar and share—with cast bar and share—different makes and divers patterns—the steel plow mould, share and bar. I have used steel and iron hoes, steel and iron spades, steel and iron rakes, &c., &c., and I have the proud satisfaction to here acknowledge my indebtedness to merchants and manufacturers, for my many presents from Chicago, Boston and New Orleans. If we would derive the full benefit of our labor, we must call to our aid the mechanic, he is our main sheet, and when we equip our vessel we must look well to that point.

How many readers of this journal have ever tried the economy of a Sinclair straw cutter, 9 inch, $25; 11 inch, $28, 14 inch, $45, (size of cylinder on which knives are placed). I know many who regard them as follies. But when you have to feed fifteen to thirty horses, and from fifty to one hundred head of cattle, you will find the straw cutter will save fodder, shucks, hay, pea-vines, &c., every winter to pay for it.

Sinclair's corn and cob crusher at $30, or, the better article, Beal's, at $50—who would think of them? Yet, my countrymen, admit the cob is only fit to expand the stomach, no nutriment, only to save fodder and hay, how long before the time in gathering fodder, and the less land for hay, would pay all expenses.

We of the South have a jaundiced eye. Every thing we view looks like gold—costly. Why should we not regard these matters as an investment? If my $50 corn and cob crusher will pay interest say 7 per cent., and wear and tear, is it not as good an investment as to buy land and negroes? If my $45 straw cutter saves me only 25 per cent., can I make other use of my dimes more beneficially? It has been in use for ten years. And so might I go through the entire catalogue of implements, even to a gimblet. But I have already went a few lines beyond my established length of an article. and close by signing myself, your brother in every good word and work,

M. W. PHILIPS.

Edwards, Miss.

Corn Culture.

MESSRS. EDITORS:—As it will soon be time for us to commence Planting corn, every farmer should have his lands well prepared. I will give you my rules for planting and working corn. I agree with the committee in having our lands well prepared before we plant. If my lands are level, to plant in the hill, on up-land, 5 by 3 feet is my distance—one stalk in a hill. Bottom lands 5 by 3 two stalks.—To be sure of a good stand, is to drop from three to six grains in a hill. If my lands are rolling, I say drill. When I commence planting, I open first with a large shovel, then run in the same furrow with a keen scooter, as deep as the horse can well pull the plough. If it is hill corn, I cover with a hoe—if drill, I cover with the plough, and scrape off with a board just before the corn comes up. Drill corn, on up land, should have three feet distance. Bottom lands will bear closer planting. From the 10th to the 15th March, is a very good time to commence planting high lands. My first working, if my land has been well prepared before planting—I have my scooter and shovel in good order—I run around with a scooter as close and deep as I can have it done I then throw one shovel furrow on the scooter. The hoes follow on behind re-

planting, thinning-out, and hoeing the corn.

Second plowing I run around with a longer shovel, and plough out the row with the same. I believe in the first and second ploughing being close and deep. The third plowing is the most dangerous working in my opinion—it depends upon what kind of a season there is on the ground. At this ploughing I do not run so close to the corn. The middle of the rows I want broken deep. It appears to me the roots and small fibres ought to be cut, for if they are not, the ground will become matted and get hard, and they will not render nourishment to the stalk; but by cutting them, they take the second growth and go in search of more food for the stalk. My opinion is, the deeper we plough our lands the more moisture is produced. If we want to save horse-labor we must plant less and work it better, then we will not have use for so many of these great consumers. Three good plowings and two hoeings, with moderate seasons, will make very fair crops of corn. I don't think the sweep will do to tend all our lands with. I should not like to depend on it to make a corn crop with. It is a good plough for cotton. They are as hard, if not harder, on the horse if they are made to take the ground. I believe in putting a broad, flat hill to my corn. A horse, tree, and a stalk of corn are all of a different nature. A horse will stumble if his hoofs are too long, a tree will die if its roots are bare, and a stock of corn will not be so large or have so good an ear on it, if its roots are not cut at all.

ROOT CUTTER.

Laurens District, S. C.

Mr. Junius Smith's Letter.

MESSRS. EDITORS:—Although no Agriculturist, I have glanced over the late numbers of your paper and am indebted to them for two entirely new ideas. One is the accusation of *stupidity*, brought forward by Connecticut against South Carolina. We are quite accustomed to hearing that we are "rash, hot-headed, arrogant, proud, boastful," &c., &c.—but "stupidity" is, so far as I am informed, a new feature in our character. Let our enemies themselves be the judges. The latest and most approved Yankee Geography informs us that "this State is remarkable for the number of eloquent men it has produced"—(a point on which we may *venture* to challenge comparison with Connecticut) and *all* their Geographies mention "intelligence" as characteristic of Charleston. It must be as you say, Messrs. Editors, in "wooden manufactures" that we appear stupid to Connecticut. Long may she maintain her superiority over us, in the manufacture both of wooden nutmegs and blue lights.

But the other new idea is contained in an accusation at which we cannot so readily laugh. Your correspondent, Mr. Junius Smith, has favored us with the information that, in his opinion, South Carolina is "in rags." Now, Messrs. Editor, I have lived in South Carolina much longer than Mr. Junius Smith, and seen rather more of the State, having made upwards of thirty journeys between the seaboard and the mountains, and I must take the liberty of denying his assertion. I allow, readily, that there are many ragged establishments to be found in South Carolina, but these are generally where the owner is either an absentee or a drunkard; and that "the State is in rags," is rather too sweeping an assertion to be put forth even by Mr. Junius Smith, who seems to be imbued with the benevolent intention of setting us all to rights. There is also, I know, a miserable migratory population, continually moving between the back parts of Georgia, South and North Carolina, and Tennessee, who never stay more than a year in one spot, and fully illustrate the old proverb of "a rolling stone." We could not reasonably expect such people to glaze windows or plant fruit trees.—But these two classes do *not* constitute South Carolina. Shall we deny the prosperity of New York, because rags may be found at the Five Points?

Of Mr. Junius Smith's present location, I am not exactly informed, but if the name does not mislead me, the establishment of which he has given us so pathetic a description, comes under my first class. But he has lived near Greenville—does he consider that village in rags, also? Why does he not inform us that it contains large hotels, good churches, excellent and cheap stores, a first-rate coach factory, a paper mill, (where our "rags" can be disposed of,) a harness and shoe-maker; that the embankments for the rail-road already present an imposing appearance; that the various avenues leading to it are lined with genteel houses and smiling cottages, whose porches and *glazed* windows peep out from the embowering vine or shady grove—while the fences in the neighborhood are whitewashed to such a degree, that I have myself seen one of them, a shining speck, from the top of Pinnacle Mountain, (N. C). Often in my journeys through the upper districts have I noticed, with pleasure, the Rose, the Althea, and even the Dahlia, growing around the door of a log cabin of one or two rooms.

As to our neglect of fruit, we have not hitherto made it an article of profit, yet it is certainly very abundant in the upper country, and in your own vicinity, Messrs. Editors, the peach, the pear and the grape, have certainly been cultivated with great success, while I have seen a dozen quarts of strawberries or raspberries gathered in a day from a garden, by no means remarkable. To the apple, less attention has been paid, because we consider it a fruit inferior to the above—and South Carolina has never been run away with, by the "hard cider" mania—yet many wagon loads are sold in the towns, as far down as Augusta, and cider is offered for sale at all public gatherings. The poor women around Greenville and Pendleton are not incapacitated by "the Carolina fever," from spinning and weaving, (besides their own clothing,) a quantity of excellent domestic stuff, which I earnestly hope, will supersede Yankee manufactures for negro clothing in the lower districts, as it has done in the upper. Heaps of woollen stockings, of their knitting, lie on the shop counters; and they are some times so thrifty as to own when married, a dozen homespun frocks of their own manufacture entirely, even to the flounces!

I cannot regret that we have been backward in experimenting on the Tea plant, neither do I consider it a subject for reproach. It is said to be the part of wisdom to learn by the experience of others; and we would rather see Mr. Smith's success before we withdraw labor from certain sources of profit to expend it on uncertain ones. What he jocosely calls "the Carolina fever" prevails, I believe, in most countries where the thermometer ranges between 80° and 90° during half the year. To Mr. Junius Smith, I wish all success in "patching" his plantation, as well as in the cultivation of the Tea plant. But I trust he may *not* succeed in creating an impression, which I consider a false one, that neglect and dilapidation mark our internal condition. At this moment, when our gallant little State seems destined to fight, single handed, the battle of the South, we have need of all our courage, all our spirits, all our *faith in Carolina*. Let us exercise these, and all will be well.

But, Messrs. Editors, it is high time I should return to my usual occupations, among which, if not "patching of knees," I may certainly mention darning of stockings—an employment to which, Mr. Junius Smith would, perhaps, advise me to confine myself. Lest your readers should agree with him, I here conclude.

Beaufort, S, C. CAROLINA.

Remedy for the Gripes in Horses.—We need never lose a horse by gripes, provided we administer, when first attacked, 1 oz. each of spirits of nitre and paregoric, in a quart of warm water.

Rye Straw.

ELLENDALE, Dec., 1850.

To the Editors of the American Farmer:

If a "seeker for information," in your last No. is really serious in asking to be satisfied of the innoxious properties of rye straw, cut to feed with the chopt grain, I may add my experience to that, I think, of most practical men with whom it is in common use, in assuring him that his horses and cattle will receive no injury, but, on the contrary, great benefit from it. I always raise a crop for this purpose, and have a portion of it threshed by hand, and the straw tied up in bundles, for convenience in cuting, and am not aware, in twenty-five years' use of it, with horses and oxen, that it has been in a single instance, detrimental to them—nay, they frequently have free access to large ricks of it, as it comes from the threshing machines, and eat the bearded heads with impunity—so do my sheep and young cattle.

This mode of feeding rye is very well, but I prefer sheaf oats, cut in a box, or by machine, with which is mixed as much chopt rye, moistened with water, as will make it adhere, to prevent the animals, to which it is fed, from wasting it, as they will do, if left dry, in search of the shattered oats. With such food their allowance of hay may be much diminished, and this expensive article of provender reduced more than one half. The screenings of wheat and oats, i. e. the light and imperfect grains that fall from the fan, ground together, and mixed with cut oats or rye straw, make excellent and economical feed, as they are fit for nothing else, and in default of these, corn ground with the cob, and used with cut straw, is decidedly the best food for horses, mules and cattle, and omitting the straw, for every description of stock on the farm, including the bipeds of the poultry yard. Every out-door dependent on the farm is fond of, and grows fat on it. The sucking pig leaves the sow to partake of it when it is poured into the trough, and the fouls contend lustify for their share of it. A bushel of corn in the ear, will make a bushel of meal, and in my opinion will go nearly as far as a bushel of shelled corn. It is, moreover, a better food; the bran from the cob corrects the tendency of acidity of the corn, which frequntly disposes the stock to scour. I have a horse-power mill for this purpose; and a simple contrivance driven by water, in my barn yard, which did not cost me $5, and which yields me two or three bushels of meal in the twenty-four hours, for it runs night and day, without other attendance than is required to fill the mortar with corn, and to take out the meal when ground. It is not an original invention with me, but rather an improvement on a primitive one, to which I will make additions when I have a little leisure, that will greatly increase its power and usefulness, without adding much to its cost. Yours, W. B. B.

Dig Deep and you'll find Treasure.

We commend the following anecdote to the particular consideration of those who are yet addicted to the practice of shallow ploughing, and who think no good comes from deep stirring of the soil. By adopting the practice of deep ploughing, a new source of wealth would be opened on many farms, which the skimming culture of a century or two has never developed.—But to the anecdote—which, though old, is just as good as if it were "bran new:"

"An old farmer, on his death bed, told his sons, who were not very industrious lads, that he had deeply buried his money in a particular field, which was the most barren land on his farm. In consequence of this information, soon after the old man's death the sons began to dig (and they dug deeply too) all over the field—and this they did again and again, for it was long before they quite despaired of finding the money. At length, however they gave up the search, and the land was planted with corn; when, from the deep digging, pulverization and clearing which it had received in the search for the money, it produced a crop which was indeed a treasure."

It might result to the profit of some of our farmer's sons, should they imagine their fathers had deeply buried a bag of dollars in some barren field, and be led to dig in search of the treasure—and though they might not find the expected wealth, their exertions would be amply rewarded, as is illustrated in the anecdote.

In further evidence of the great utility of deep plowing, we copy the following paragraph from the Report of the Hon. H. L. Ellsworth.

"Few individuals are aware of the extension of roots in pulverized soil. Von Thayer mentions finding roots of sanfoin from 10 to 15 feet deep in the ground. There are now in the National Gallery, corn roots taken from one side of a hill of corn laid bare by the freshet, and presented by the Hon. J. S. Skinner to the National Gallery. The corn was planted on the 20th May, and roots gathered the 14th of July, 1842. In sixty days some of the large roots extended more than four feet, covered with lateral branches.—I have caused the roots to be measured; the aggregate length of roots in the hill, is, by Mr. Skinners estimate, over 8000 feet. The specimen alluded to, is open for examination. The fact is here mentioned to show the importance of deep ploughing, to enable the plant to find nourishment, so much below the surface as may avoid the effect of drought, give support to the stalk, and not expose the roots to be cut off by needed cultivation. Soil is made by exposure of earth to atmosphere; and whoever wishes to make permanent improvement will not fail to plough deep."—*Exchange.*

Bodily Exercise in Early Life.—To fetter the active motions of children, as soon as they have acquired the use of their limbs, is a barbarous opposition to nature; and to do so, under a pretence of improving their minds and manners, is an insult to common sense. It may, indeed, be the way to train up enervated puppets, or short-lived prodigies of learning; but never to form healthy, well-informed, and accomplished men and women. Every feeling individual must behold, with much heart-felt concern, poor little puny creatures, of eight, ten, or twelve years of age, exhibited by the silly parents as proficients in learning, or as distinguished for their proficiency in languages, elocution, music, drawing, or even some frivolous acquirement. The strengh of the mind as well as of the body is exhausted, and the natural growth of both is checked by such untimely exertions. We are far from discouraging the early introduction of youth into the sweet and even moralizing society of the Muses and the Graces; but we would have them pay their court also to the Goddess of Health, and spend a considerable portion of their time, during the above period at least, in innocent and enlivening sports and gambols.

[*Journal of Health.*

Economy of Fodder for Animals.

EVERY man should be a scientific man in his line—that is, he should pursue the best methods of doing every thing in the best manner; and economy is the root of science. We do not mean by "economy," stingyness, for that is the worst kind of extravagance, but we mean *care*, wisdom and observation. For example, it is not good to feed cattle on mere straw, but then if we can find something to combine with the straw, to make it good fodder, surely it is good to use it as such. By cutting straw fine, and immersing it in boiling linseed meal and stirring it up, a most excellent feed is made for oxen and other cattle. Corn stalks are also good, if prepared as follows: Cut the stalks in a machine and place them in a hogshead, steam them by pouring boiling water upon them and covering them up for some time with a blanket. Put some salt among them, and when cold strew over them a little ground meal, and a most excellent fodder is the result.

Food of Plants.

MESSRS. EDITORS:—A remark in the Farmer and Planter of last month, by Broomsedge, in reply to Pry, that the world was running mad about mineral or organic manures, is not only true, but is, also, one of those errors which we, American people, are predisposed to adopt; having originated with a very important personage, in the eyes of those persons who never do their own thinking, but are operated upon alone by impulses; among the numerous errors to be found in Liebig's Agricultural Chemistry, this is one altho' not the least. Almost every soil possesses the inorganic constituents of plants in abundance. Take for instance our own, which contains as few simple substances as almost any other formation, and what do we find in it?—Granite is composed of these minerals in the first instance, Feldspar, Mica and Qartz or Silex. Feldspar is composed of Alumina, or Clay; Potash in large quantities, lime and Silex or Quartz and Metallic Oxides. Mica is composed of the same substances, in a different proportion, with the addition of Magnesia. Now here we have Silex or sand, Clay, Potash, Magnesia and Lime. If we burn up the grass, leaves, &c., that accumulate annually, what more do we return to the earth than it had before they grew? If they grew unaided once they will again grow unaided if suffered in any manner to return to the earth.

But so long as there is earth composed as above, to grow in, they will grow if other elements of a very different character are present, to wit: organic remains. If inorganic manures were, as we are led to believe by Liebig, all that is necessary in the earth to accelerate and promote the growth of plants, the carbon, as he says, being derived from the atmosphere, and that too taken up by the growing leaves, our farmers have from time immemorial committed a great error in hauling out their manure. They should have burnt it in their barn-yards and hauled out the ashes, as these contained all the inorganic substances necessary. But away with such nonsense; were any one to pursue the system of Liebig, as laid down in his Agricultural Chemistry, I think in the course of three years on one of our worn-out, red clay farms, he would be compelled to allowance his hands and stock to homeopathic doses of corn and bacon. His work is but a list of errors from beginning to end. Nine-tenths of all plants are composed of carbon, the greatest portion of which is derived from decaying vegetation in the ground, placed there either

naturally or by the labor of man. Another portion of it is derived from carbonic acid in the atmosphere, carried down to the roots of plants by dew and rains. An experiment performed by Van Helmont, and subsequently by others, has been the means of deluding many into a false theory as regards the growth of vegetation. He weighed a box of earth previously dried, and in it planted a willow tree and suffered it to remain there five years, at the end of which time he again dried the earth in which it grew and found it had lost only three ounces, while the tree had gained some sixty pounds; hence he and others are led to infer it must have received a large portion of its substance through its leaves from the atmosphere. Now had he expelled all the water from the tree, he would have found that instead of sixty pounds, his tree would have dwindled down to some five or six; and if he had coated the earth over with some substance, so as to exclude the air and absorption of carbonic acid from the atmosphere, his tree would have died in a few weeks at farthest. I have experimented a good deal, to ascertain if plants absorb carbonic acid through their leaves, but without success. The description of the experiments of Daubeny and others who pretend that they do, are erroneous, from their own showing. The leaves are the expiratory organs of plants, and not the inspiratory as can be easily demonstrated. So in summing up this question I will say to farmers and planters, go on putting organic manure in the earth as much as you can get, and more the better, so as to give an ample supply of carbon, the most essential and necessary food of plants; and the inorganic substances necessary to the growth of the crop cultivated will be found as readily by them when it decays as if burnt and the ashes scattered, for if it is in the ashes, it must have been in the plants you burned.

The amount of inorganic substances found in plants, on analysis, is very small, in proportion to the carbon; almost every soil yields a sufficient. There may be, I will acknowledge, cases of a radical deficiency of some one or more of the necessary elements; but I conceive the cases to be very rare. Lime and the alkalies act more in assisting the decomposition of organic substances, so that they may be taken up by the plant as food, than by entering into its formation, and as such auxiliaries, are of essential service. As I have before said, put your manure in the ground, as it decays, carbonic acid will be formed, which in connexion with that brought down daily by the rains and dews, will be taken up in solution by the roots of the plant, will be carried up to the leaves, there spread out to have the water and its elements evaporated by the sun, and the other portions assimilated. The leaves and bark act as a filter or strainer. They suffer the parts not necessary to form the plant to be evaporated through their pores, and retain what is necessary to its formation. If one take the pains to examine the phenomena of the flowing of the sap in spring, they will find that with a brisk west wind and a clear sky, it flows freely; while if the wind change to the east, or the sky become overcast with clouds, it ceases to flow in a few hours, showing, that as long as evaporation goes on freely the sap rises and when one ceases, so does the other.

I will close by saying, don't depend too much upon your plants getting their supply of food from the atmosphere, nor upon inorganic manures; Prof. Liebig to the contrary, notwithstanding.

J VAN BUREN.

Clarksville. Ga., Feb. 15, 1851.

REMARKS.—It occurs to us that Mr. Van Buren underrates the importance of applying *inorganic* manures to lands as much as the ultra of the "ash theorists" do the value of *vegetable* manures. In a former issue we suggested our ideas in the matter very briefly, but shall take the occasion shortly to be a little fuller, and try to be a little more intelligible than before, so as not to be misapprehended. We have not the time now. One word however, we must indulge in regard to the theory urged in the above communication that "leaves are the expiratory organs of plants and not the inspiratory." If it be true that plants receive their supply of carbonic acid *only* through their roots, and the leaves *only excrete*, we have hitherto been in a radical error. If leaves do not absorb carbonic acid and moisture from the atmosphere, there are many phenomena involved in mystery, which we had regarded satisfactorily explained and settled. The physical structure of the leaf, when examined under a microscope, would lead us, in advance of experiments or knowledge of facts, to expect the phenomena of such functions as it is now generally thought to perform. The design seems obvious. The under surface presents hundreds of thousands of orifices nicely constructed as if for the purpose of absorption; the upper-side is very differently formed; and accordingly they are found to perform very different functions. Whenever a physician or nurse wishes to draw the wound of an invalid he applies the under-side of the leaf to the parts; and, were he to show such a want of knowledge as to apply the upper, would be ridiculed. This practice shows the absorbing powers the under side is found to have, and demonstrates its adaptation to the functions ascribed to it. Again—if water is applied to the upper surface of a leaf in a wilted state no perceptible change takes place, but if to the *under surface it immediately revives.* These different results, which all have seen,-we are unable to account for except upon the hypothesis that one side *imbibes moisture* and the other does not. During a dry summer's day, the leaves of corn in the field are frequently seen twisted, and plants every where wilting, but with a slight sprinkling of rain, all freshen and revive. This cannot be an effect produced through the roots, and seems to us not easy of explanation if the leaf only performs the offices of excretion; but entirely easy upon the principle of its imbibing moisture.—The *House-leek (sempervivum tectorum)* and other plants of a similar nature, must have power little short of self creation, if they do not draw food from the atmosphere; for it is wholly irrational to suppose they receive carbon enough for so large a plant from the *wall* to which they adhere and grow. If they do, it is hardly worth while to add more carbonaceous matter to our soils, or to urge further deep tillage. Thus we have one "vexed question" disposed of.

The experiment of Van Helmont, if we are not mistaken, was thought to prove that the only food of the plant was water; but at length Boyle advanced the opinion that the water which was applied to the plant under the test of experiment contained "earthy" substances. And this opinion has been held correct. Dr. Priestly first maintained that plants absorb carbonic acid through their leaves and supported his theory with numerous successful and entirely satisfactory experiments. It is now so well settled that it devolves on those who controvert the hypothesis to show why it is, if not absorbed, that when plants are confined in a fixed portion of air containing carbonic acid, the quantity of the acid is invariably diminished after the lapse of a short time; they ought to explain why it is, if not converted to use, and assimilated, that when the plant is confined to a given portion of air, the presence of carbonic acid is essential to its growth, and when not present the vegetable dies. Experiments have been frequently made and the facts of a diminution of the carbonic acid in the one case, and the necessity of it to support vegetable life in the other, are well attested. It is also said on authority entitled to the highest respect, that a current of air is found to lose the most of its carbonic acid by passing through a field of corn in which the leaves present a great extent of surface, but not without an exposure of much surface; if this is so, the concurrence of facts and theory requires very clear reasoning and proof to avoid the conclusion that the carbonic acid has been absorbed by the leaves.

The foregoing are some of the evidences in proof that plants take in food through their leaves; if, however, they should be shown fallacious, or proof of a higher and more substantial nature should be advanced in favor of another theory, this of course must fall to the ground. Whether so or not, we can but admire the independence of thought manifested by Mr. Van Buren, and not the less so because so much authority now weighs against his own opinions. Hundreds of errors have by boldness of this kind been overthrown, and probably not the last yet. We shall be pleased to receive a further and fuller vindication of the opinions of Mr. Van Buren.—EDS.

A GOOD SIGN.—Dr. M. W. PHILIPS, so much devoted to the planting interest of the South, and so well known as an agricultural writer of great practical merit throughout the United States, announces to us that he has it in contemplation to make a tour through Europe, for the purpose of making observations and taking notes on agriculture. This is an evidence of progress among us. It ought to be a matter of rejoicing, that we have spirits that are so imbued with a love of rural pursuits, as to be willing to spend their lives and means in a manner from which so much good accrues to the whole public.

We have the promise from Dr. P. that he will inform us en route of what is thought will instruct and entertain our readers. We wish him welcome to the presence of the agriculturists of the Continent and would take pleasure, if in any way possible, in facilitating his progress.

SEVERAL communications have been received too late for this issue—they shall appear in our next.

Purple Dye.—Put on logwood chips in a copper kettle and let it boil about fifteen minutes. Take it off and strain off the chips, and put in some alum while hot to set the color; when dissolved, put in your wool or cotton and set it on the fire to boil a few minutes to take the dye.

Cotton Planting.

THE FOLLOWING article on cotton planting is taken from the Southern Agriculturist, and although not very recently written it is none the worse for age. Indeed it accords with our notions better than any thing we have seen recently written on the subject.

We have frequently endeavored to convince our cotton planting neighbors of the impropriety of placing their cotton seed too low in the ground, for the reasons stated by Mr. Bale, but it is hard to get a man out of his old beaten track, especially if he happens to be one of those wise acres that "knows more than the books."

In this business of cotton planting, we are endeavoring to practise what we preach. Our cotton land was prepared, for the present year's crop, in the months of December and January, by throwing up as high ridges as possible, with a good two horse turning plough, and *without* having first run a furrow to ridge on, as is customary. On the summit of these ridges, we intend planting, reducing them in the operation of planting no more than can be avoided. In our up country, where not a great deal of cotton is planted, we believe the time would be well spent in dibbling the seed, at proper intervals for the stand of the cotton, in the top of the ridges. This would leave the young plants "high and dry," not exposed to the chilling effects of the cold soaking rains of the spring, and within the vivifying influence of the "feeble rays" of the sun at that season. These are not the only advantages we would anticipate in this mode of planting. At the first working, the cotton will be so much elevated as to allow of throwing well up by a single furrow on each side of the ridge, to the plant, and yet leaving the water furrows open, and after this, at the second plowing, or immediately, if it is feared the ground may become too hard, the middles may be ploughed out with a single furrow, the distance between rows not being greater than is usually given in the up country.

Large planters may, and no doubt will, object to the mode of planting here advocated, but even on a large scale the time lost in planting would, in all probability, be gained in the after culture. We have communicated with Messrs. Sinclair &co. of Baltimore, to know if their corn planter would answer to plant cotton seed after rolling them well in ashes, as is our invariable practice. He thinks they will not, but promises to try to get up something according to our hints the present year. If he succeeds so as to enable one hand to plant, at any desired distance on the ridge and cover, some ten or fifteen acres, as may be done with the corn planter in a day, it will prove an import-desideratum to cotton planters. The use of it would remove any objections to the dibbling mode of planting. But to the article:

BENTON CO. ALA., SEPT. 6. 1837.

Sir:—Accompanying this, are five dollars, the amount of my subscription to the Agriculturist for the present year,—to which I would add a few thoughts on what I think an improved mode of planting cotton for the upper country.—In this section, there are three plans that are in general use, each of which I believe to be considerably objectionable.

The first, and that which I think most frequently followed, is to run a single furrow with a bull-tongue or gopher plough—in which the seed are drilled—then to cover it by running, on each side, a furrow, with an ordinary shovel plough; and at the expiration of a week or ten days from the time of planting, to strike off the top of the ridge by a board affixed to an ordinary plough stock, so as to level the bed, and remove the first growth of young grass.

The second mode is to throw five furrows together, so as to form a tolerable ridge, in the centre of which, to run as small a furrow as possible, and drill the seed—then to run a small harrow on the drill, so as to lightly cover the seeds.

The third plan differs from the second only in covering with a board of ten or twelve inches in length, affixed to a plough stock. in a way similar to the one used in striking off the ridge in the first plan spoken of.

My objections to each of these modes, I proceed to state.

In the first place it will be considered, that on planting, it is desirable to place the seed in a situation in which the spring rains may drain from them; also, that they may receive as much as possible the warmth and benefit to be derived from the feeble rays of the sun, at the period of planting.

The first plan I deem objectionable, inasmuch as it buries the seed too deep in the earth, at the bottom of a furrow, in which the cold spring rains, in a stiff soil, will run, and measurably settle—which, together with being covered with so great a depth of earth, at a cool season of the year, must destroy the germinating properties of the seed, and cause so frequently a bad stand of cotton—what does come up, has so little vigour, as to die almost immediately; or if it at all survives, to remain stunted considerably after.

The second and third plans are objectionable, inasmuch as the grass frequently gets the start of the cotton—whereas, much labor might be saved by keeping the cotton clear of grass in the early stages of its growth.

The plan I propose, and which I have successfully adopted the last spring, is as follows: first to run a small furrow, with a bull-tongue or gopher; the second, to run with a common shovel, a furrow on one side, and the soil from it will sift into the first furrow, so as to about fill it, then drill the seed immediately where the first furrow was run, and cover pretty heavily by running a furrow on the other side.

By the seed being placed on the top of the gopher furrow, an excess of moisture is drained off, by running under the seed, and the elevation of the seed is sufficient for it to receive all the advantages to be derived from the rays of the sun at that season. But there are yet other advantages to be spoken of. Immediately after the cotton commences showing itself above the surface of the ridge, another furrow must be run on each side of the former, making, in all, five furrows, so as to cover completely whatever grass may be coming up on the edge of the two former; and then by a board, twenty inches in length, affixed to a plough stock, and hollowed out two and a half inches on the lower edge, strike off the top of the ridge of the old furrow, which will level the bed—take off the crust of the earth, and demolish entirely whatever young grass may be appearing or about to appear on its surface, and in ten days the cotton will be thrivingly discernable from one end to the other of the row.

JOHN BALE.

From the Southern Planter

Sweet Potatoes.

MR. EDITOR.—In compliance with my promise and your request, I will now try to lay before your readers my mode of raising potatoes, and shall do it in as few words as possible; it will be, however, necessary to be explicit, to be fully understood, and most especially in these days of wild theory without experience. A young farmer will start to farming, and it may be he is just from college, and is well skilled in language and would disdain to ask information of an experienced farmer because he sometimes has come for came and yourn for yours, of hoss for horse, and so on, yet experience and practice often costs a gentle smile, and says he paid dear, very dear for his whistle.—And now to the subject.

1st. The land must be light or sandy, and it will be much better to take poor land and make it rich. The great advantage will be less vines and more roots, Secondly. The land should be well plowed eight or ten inches deep. The plowing should be done the first of March, and should be ploughed over, if possible, after every rain, say once in two weeks; and always plough the same way.—When the time has arrived for planting, make a nice four furrow bed. After the 1st bed, run the beam of the plough next to the bed, leaving a small strip for the third furrow. In this way you will have no need of stakes. Never bed the land until you have a season. As soon as the plough starts, start your hoes to hilling.

The rows and hills should be about three feet apart. If the day is cloudy it is best to set the plants as the hills are made; if not, let the hills remain until late in the evening; then, with the hand, knock off all the dry dust, open the top with the hand four inches, set the sprout straight, press the dirt to the roots; be careful that no leaves are covered. The planting being over, in ten days, should there be rain, the hills should be scraped down, say to the depth of one inch. Hills are often chopped down, and the roots left exposed, causing a failure of the crop.—After the scraping is over and the time for hilling, which will be in two or three weeks, run the plough twice in each row, which will make fine dirt, and a hand can hill three times as many. This having been accomplished, a third hoeing, which I call scraping up, is to be done, and this should take place when the runners are about to meet, or sooner if there should be grass. It will be remembered there is no grass to remain on the top of the hill. The work is done. I dig with a hoe. A hand should dig thirty bushels per day. I have assumed the position that potatoes are raised from the sprout, and perhaps it may benefit some to give the mode. Have the bed in a southern exposure; dig out a place in the form of a ditch, eighteen inches deep; take the manure fresh from the stable and as clear of straw and stalks as possible; pack it down hard and smooth to the depth of twelve inches; then cover it one inch deep with very rich light dirt; place the potatoes on the dirt, so as they will not touch each other, then cover with light rich dirt three inches; make all perfectly level and the work is complete. In the manner above described I have raised large quantities for Baltimore and Fredricksburg markets, and it is no hard job to raise three hundred bushels per acre, on suitable soil. I have kept an account of sales of potatoes for twelve years, and they have averaged over fifty cents per bushel. One or two words more, Mr. Editor, and I have done.—There is no doubt, some will say, if all this is to be done, I will raise no potatoes. Be it so; there is no gains without pains, and so, farewell.

NORTHUMBERLAND.

Capillary Attraction.

MESSRS. EDITORS:—I stated in my communication on "woods burning" in your last paper, that moisture was necessary to vegetable life, and that there were two other modes besides rain, for the supply of this indispensable ingredient, to wit: *Capillary attraction* and formation of *Dew*. I could not then, without being too prolix, fully elucidate these beautiful subjects, and their immense importance in vegetable economy, and therefore I propose in a short article, to supply the omission.

Capillary attraction in a chemical laboratory is that by which water is said to rise in a tube. But nature, whose laboratory is on a larger scale, makes this simple principle subservient to the wisest and most valuable purposes. By it, the particles of moisture from below, are attracted upwards to the earth's surface, until every particle of earth, if there is sufficient moisture, is pervaded as one mass. The principle of *gravitation* or the downward principle, and this upward attraction seem to be auxiliary forces, the object and use of which, doubtless is, that every particle of earth should be supplied with moisture. Rain, or moisture, is the solvent by which manure or the food of plants, after it has undergone sufficient decomposition, is conducted to the mouths of the plants. Manure in a dry state, cannot act. It is perfectly inert, and must be rendered *drinkable*, before the plant can take it up. How soon after a shower of rain do our crops and all vegetation revive. It acts like a charm. A cup of water to our parched and thirsty mouths, is not more grateful and reviving, than is a shower of rain from the heavens upon a dried up and famished crop. How careful should we be, therefore, in husbanding this great source of vegetable life, and keeping a good supply on hand when the heavens fail. It can be done, and should be done by every provident farmer. He should have his wells and reservoirs of water deep in the bosom of the earth, that when the supply on the surface fails, this principle of capillary attraction, as with a cup, will carry moisture to the young and tender plant, and slake its thirst from the fountains below. As I heard our distinguished and lamented neighbor, Mr. CALHOUN, make use of this emphatic remark, at a ploughing match in our village, at which the extraordinary depth of seventeen inches was reached, by two horses, with Dr. Broyles' subsoil plough—"*What a reservoir for moisture!*"

It may be well to add that this principle of capillary attraction is the cause of the difficulty of draining our wet land, a want of a knowledge of which among our farmers is frequently a serious impediment to success. It has been ascertained that water will rise several feet above the fountain in adjacent lands, and thereby will permeate the whole superincumbent mass with a superabundance of moisture, when the supply is constant. Plants suffer from an excess of moisture as well as from a deficiency. In this respect, capillary attraction is the bane, and in the other, the antidote. Both are within our control, and are a striking evidence that the laws which govern matter may be made tributary by the powers of the mind, to the most useful and valuable purposes. The remedy in the one case is, to dig deep—and the other to plow deep. In the one the poisonous exhalations which are produced by stagnant water, and which are equally fatal to vegetable and animal life, are carried off and rendered innoxious—in the other, the parched earth and the dried-up and famished crops, are revived from the subteranean fountains which deep culture and capillary attraction never fail to supply.

If this theory be correct and applicable to agrieulture, how can any one hereafter deny the benefits which science has contributed to the useful purposes of life.—Here, her lamp has lifted the veil and brought to light, from the hidden recesses of nature, a principle which, though not visible to our eyes, is known and established to be an active and vivifying one. This is only one among the numerous instances that might be adduced, of the immense benefits that have resulted from the discoveries of science. In fact, it may be truly said, that all the useful arts were in their infancy, and groped in "thick darkness," until science came to their aid. This is eminently true of the art of agriculture, which by reducing to correct principle, has given dignity, value and importance, to what had been considered a low and ignoble employment. Some of the master minds of the age, have devoted their powerful intellects to the subject of scientific agriculture; and by means of their researches and the wonderful advance of chemical, mineralogical and geological sciences, and the application of them to all the subjects within their range, have advanced agriculture to the dignity of a science, with true and fixed principles to guide and direct it. Formerly, it had to depend on the most loose, careless and ill-directed experiments, but now we have the laws of nature, and the constituents of all bodies by means of the process of analysis, so perfectly unfolded to our minds, that when we come to profit by a knowledge of them, we shall be able to substitute the most sure and certain results for the most ruinous and sad disappointments. Chemistry and her kindred and associate sciences, are to the agriculturist, what the compass is to the mariner. Over the whole sea of nature—through the atmosphere—on the surface and in the bowels of the earth—and in the great ocean by which we are encompassed, they guide and direct with an

unerring hand, and subject all substances to laws which are fixed and invariable. If we want to know the constituents of a plant, and thereby the food on which it is sustained, we have only to analyse it and ascertain every substance of which it is composed. If we want to know what are the constituents of a soil, what it has in abundance and what it is deficient in, we have only to analyse and the test is certain and unerring. We are thereby enabled to apply such substances as the defects of the soil thus ascertained may require. If we want to know the constituents of the atmosphere, and the manner in which this great reservoir of decomposed matter, is made up and composed of certain gases, which combine in certain definite proportions, and are only healthy when united in such proportions; and that these gases enter into, and in fact, are indispensable to vegetable nutrition and to animal life, we have only to go to a chemist, or learn chemistry, and all these things are as familiar as A B C to the scholar. If we wish to go into the bowels of the earth to search for its hidden treasures, there too science will hold her candle to us, and guide us through her dark and hidden recesses. If we go down into the "dark-blue" ocean, there by a late discovery of chemistry, the briny and nauseous wave has been robbed of its salt, and presented by the hand of science a fresh and cooling draught, to slake the thirst of the hard worn mariner. In fact the modern sciences, as they are most aptly and properly called, may be said, in relation to man, to have made a new creation; for they have, so far as his mind comprehended the mysteries of nature, which they have unfolded, educed order and regularity, out of chaos and confusion, and what was before dark, mysterious and incomprehensible, is now plain and obvious. Therefore, it may be truly said, a new era in agriculture may be dated from the discoveries of chemistry, and an application of the facts which an investigation of the laws of nature has educed.

How wonderful and beneficent is the wisdom and gooddess of God, as seen in these simple yet sublime operations of nature; and how can any one who is familiar with her laws in those grand and beautiful adaptations, by which the whole of his creation is teeming and sustained, be indifferent to his goodness and his power?

PENDLETON.

March 9th, 1851.

(To be continued)

Guinea Grass.

MESSRS. EDITORS:—Can you give me any information in relation to Guinea grass? A rather quisical friend, who believes more in cotton than any thing else, advises me to try it first, and if I do not like it, after having got *rid* of *it*, to try the *Bermuda*. He feels confident that one or the other will cure my grass mania.

FARMER.

—

REMARKS.—From any experience of our own, we are unable to communicate much light to our correspondent "Farmer" on the qualities of the Guinea grass.

It is, we know, by some, spoken highly of for soiling, whilst by others it is condemned as not only worthless, but a nuisuance.

A friend in Greenville sent us some roots a few years since, which were laid in drills, and from which the grass grew luxuriantly for two seasons. Both horses and cattle seemed fond of it when fed green. It makes a coarse hay, but if cut up, moistened, or steamed—which would be better—with a little meal mixed, there is no doubt it would afford a nutricious and valuable food, both for horses and milch cows.

Fearing it might become a pest, in the fall of 1849, we had our fattening hogs turned on the lot and kept them on it till there was every appearance of its entire eradication. They were then taken off, and the lot ploughed in the spring of 1850 and planted in corn. In due time the grass made its appearanec however, but though not entirely defeated, it put us in mind of what was said of Gen. Taylor at the battle of Buena Vista, "that he was fairly whipped but did not know it."—We think that another such a course would settle the hash with the Guinea grass, and consequently should not be afraid to put it on any land of ours.

We believe it matures no seed, although it blooms and its seed vessels seem to be fully developed.

Since writing the above we find the following interesting letter from Col. Saml. Pickens, in answer to one from Dr. R. W. Withers, on the subject of enquiry by "Farmer," and which we publish for his and his friend's especial benefit.

These letters, with an able report, were read by Dr. Withers before the Greensboro' Ala. Agricultural Society, and published in the Beacon. In his report, Dr. Withers controverts an article previously written by Dr. Manly, of the Alabama University, and who seems to have been an enemy "till death," of the Guinea grass. We have never seen Dr. Manly's article:

GREEN CO., ALA., JULY 20, 1850.

Col. Samuel Pickens:

DEAR SIR:—As you have for some time been successfully engaged in the cultivation of the grasses adapted to our climate, and more particularly of the Guinea grass, and as you have seen the latter growing, both in this part of the country and in the West Indies, you would oblige me by giving the result of your experience with it, and whether the kind of grass which we cultivate under that name, is identical with that of the West India Islands. Any other information, you may be in possession of, respecting the habitudes, cultivation and productiveness of the grass, would be thankfully received, as I am anxious to lay it before the Agricultural Society.

Yours very respectfully

A copy. Signed, R. W. WITHERS.

The following is the reply.

UMBRIA, JULY 25. 1850.

Dr. R. W. Withers:

DEAR SIR:—I received your note of the 20th inst. some days since, requesting me to give you such information as I might possess in regard to the several grasses which have proved to be the best adapted to our climate, and more particularly the Guinea grass.

You remark, "as you have seen the latter growing, both in this part of the country and in the West Indies, you would oblige me by giving me the result of your experience with it, and whether the kind of grass which we cultivate under that name, is identical with that of the West India Islands."

In reply to your note, I have to state, that the trials I have made on the sandy lands with many of the grasses that are esteemed valuable in more northerly climates, including the orchard grass and red clover, have not been successful.

I am satisfied, however, from experiments made by others, that the latter will grow admirably on the rich lime lands. The herds grass or red top, I think is decidedly the best I have tried, for hay, and the Bermuda for grazing. The former, to insure success, must be sown on rich wet land.

To the eastward of my house, and less than one hundred yards from it, several springs bursted out from the bottom of a hill and made their way through a reed brake some fifty to eighty yards wide and about fifty rods in length, making a perfect swamp, which I feared would render my place sickly. This brake lay between two tolerably high ridges, and consisted of a mass of vegetable matter formed, doubtless, from the washings of the hill sides for ages, and it was covered with a dense growth of cane, briars, weeds, rushes, bamboo and every thing which was offensive to the eye or touch, and woe to the quadruped in the shape of a cow or horse that was led by the temptation of the luxuriant cane into this bot-

tomless bog, and mass of putrifaction.—To abate this nuisance—this abode of snakes and frogs, and other loathsome reptiles, I set to work in the summer of 1838. My first operation was a deep ditch cut around the head of this marsh, and down each side of it. These ditches soon dried the swamp so that the hands could enter it without the risk of life or limb. After clearing off and burning all the rubbish, I had the ground thoroughly broken up with the grubbing hoe, it being yet too miry for the plough. In the following spring, I had it drawn up in high ridges with the weeding hoe—planted in corn—worked with the hoe, and in the fall I gathered a good crop from it. After clearing off and burning all the stalks, I had the ground levelled with the hoe and rake.

With this preparation, the ground was sown in herds grass in December, 1839, and I have taken a fine crop of hay from it every year since.

About three years ago, the broom grass made its appearance among the herds grass, and has increased very fast. To meet this formidable foe, I adopted the plan of breaking up a portion of the meadow, each year, and sowing it in the fall with herds grass, and so on throughout the meadow. To raise the herds grass successfully, I am of the opinion it will be necessary, on account of the broom, to cultivate the meadow about every sixth year in rice or corn. This disgusting swamp, as it formerly was, is now firmly sodded with herds grass, so that a wagon and team can safely pass over every part of it, and so far from offending the eye or causing sickness, I regard it as one of the most attractive spots on my premises and entirely free from miasma.

Now as to the Guinea grass. Although I have been cultivating it only about six years, I have been acquainted with it since the year 1827, and was probably the first person that brought it to this state. In the summer of 1830, I brought a bunch of this grass, in a box, from Matanzas to Mobile and gave it to my friend Dr. Casey, who told me the next spring he had planted it in his garden, and had then a fine patch of it.

When it was first brought into this neighborhood, some eight or ten years ago, I suppose it came from Dr. Casey's stock in Mobile, but being informed that it came from Virginia, I doubted the genuineness of it, believing that it would not grow in climates so far north. But the very moment I saw it, I recognised it, and without pretending to be a botanist, I am very certain that the Guinea grass which we are now cultivating, is identical with the Guinea grass of the West Indies.

For hay, I do not think it by any means equal to the herds grass, but for soiling or feeding it in a green state, I know of no grass comparable to it. It may be cut in our climate four or five times during the season, and if cut before going to seed, there is no grass of which horses and cattle are fonder.

I became acquainted with this grass in the Island of Cuba, where I spent several months in the winter and spring of 1827. It was growing on almost every sugar and coffee estate that I visited on the Island, and was universally spoken of as their best dependence for the sustenance of horses and cattle. Indeed its introduction there was regarded as an era in their agricultural history.

In that climate of perpetual verdure, it can be cut every month of the year, and in addition to its intrinsic value as food, it is there extensively used for ornamental purposes. In the long avenues intersecting the beautiful coffee estates—shaded with several rows of trees, it is very common to see a row of the Guinea grass on each side of the cleanly swept walks, growing luxuriently, and trimmed, with great exactness, to a given width, extending from one side to the other of the avenue. When these rows of grass attain a certain height, they are all cut down at the same time and given to the stock, thus, combining utility with ornament.

I understand objections are urged, in our climate, against the Guinea grass on account of the difficulty of getting rid of it when once set out. I have never heard this objection to it in the West Indies, but from my own knowledge of it, I am inclined to think, if it becomes well set, it will be very likely to maintain its position with great firmness, and will suffer no intruder, such as the broom, to elbow it out. To this property, I am not inclined seriously to object, for in this climate it is very certain it cannot be propagated from the seeds, and the process of extension from the roots must be slow, and I would reccommend that it should never be planted where it is not intended to remain. Yours very respectfully

SAMUEL PICKENS.

Farmer and Planter.

THE February, and first number of the second volume of this most excellent monthly, comes to us this week filled as usual, with much valuable and interesting matter. If this journal does not succeed, it will not be the fault of its able and energetic proprietors, Messrs. Seaborn & Gilman, who spare no pains in obtaining valuable original matter.

We feel inclined to give this number more than a passing notice, from the fact that it contains more original matter than any other work of the kind we have ever noticed, which is an earnest of the energy with which it is to be characterized in future. It is not only the quantity however, of the matter, but the *quality*, which entitles it to the favorable consideration of the southern public.

In the first place, the editorial, which we will endeavor to publish in our next, is an article, the tone and style of which, as well as the sentiment, ought to give it a reputation far above most of its contemporaries. In the second place, the two articles, "Pendleton" and "Laurens," upon a subject of grave importance to the tiller of the soil, viz: "is the ash and humus of plants one and the same thing,"! are productions of no common merit among farmers, and show conclusively that the subject of agriculture not only furnishes a field for, but is beginning to engage the talents of the most learned and scientific among us. An able contributor to the Farmer and Planter, in a former number, over the signature of "Pry," asserted and maintained with much plausibility, that the ashes and humus of plants were identical, or in other words, that vegetable matter, whether burned or suffered to decompose, or rot, furnished the same quantity of manure or nourishment to plants, basing his arguments upon an inference drawn from Liebig's and Petzholdt's doctrine, that plants and all vegetable matter derive their inorganic or mineral substance from the earth, and their organic or gaseous compounds from the atmosphere, and in their disorganization or destruction returned to the earth only what they received from that source, and to the air the elements drawn from it, and it matters not whether they be decomposed by fire or natural decay. To this inference, and indeed to the entire doctrine of Liebig and Petzholdt, Pendleton and Laurens both take exceptions, and prove, we think, beyond a doubt, that the humus or decomposed vegetable matter affords more nutriment to plants than the ashes of the same, destroyed or decomposed by fire; but at the same time, we think they have not controverted the doctrin of Liebig and Petzholdt, nor do we think it at all material that they should, in order to show that humus is a better manure than ashes, because, we believe that the very act of decomposition, or rottening process of vegetable matter, not only tends to enrich the soil by shading it keeping it moist and porous, so as to enable the process of decomposition to go on more rapidly, but distributes to the air, through the young vegetation, in the shape of carbon, the elements it received from the air, assisting by that process the growth of the plant, while the destruction, by fire, of vegetable matter, separates these elements and returns them immediately to their respective and appropriate spheres, without materially benefitting the growth of plants. This view of the subject, carries out, in our opinion, the beautiful idea broached by "Pendleton," that plants are *cannibals* feeding upon one another, and the destruction of one is the life of another.

Another objection to burning vegetable matter, and especially leaves in the woods and straw in the old fields, is that much young vegetation is destroyed, and thereby prevented from becoming fertilizers by extracting from the subsoil and placing on the top of the earth, the annual deposites which, in the process of time, constitutes rich soil.

We are truly rejoiced to see these agricultural controversies—they are well calculated to create a proper interest in the South, to this all important subject of farming, we hope they will be kept up through the columns of the Farmer and Planter.—*Laurensville Herald.*

RINGWORM—Apply repeatedly a paste of common gunpowder with water.

BEE STING.—Apply mud.

Meteorological Observations.

MESSRS. EDITORS:—I have no wish to cause any of your readers to take up with either moon planting of seed, or of galvanizing them, without manure and good culture. Yet there are things not yet arrived at, if dreamed of in our philosphy, that may be of use hereafter, and for this reason, I merely allude to them at present to draw the attention of some of your intelligent readers, hoping they will act therefrom.

The Smithsonian Institute has been making investigations in meteorology, for a length of time in connection with that department of the Patent office. Why should not the Farmers and Planters of the South take a helping hand, and thus turn it to our own account, as well as to commercial value. Our country is strictly an agricultural people; yet all experiments, investigations, and outlay of many, have been made having a bearing on commerce and manufactures.

It is therefore respectfully submitted to the Farmers and Planters of South Carolina, (and why not to others?) that they will through Senators and Representatives of the State, procure a complete set of meteorological instruments, and begin to investigate. It is best that intelligent, educated men in the country, should take it in hand, and I suggest that each District appropriate $50 to $75 to be used by Joseph Henry, Esq., the Secretary of Smithsonian Institute, in procuring a set of instruments; and that full notes be taken in every district in the state. I would suggest that the instruments be a Barometer, two Thermometers, Rain guage, instruments to test moisture in the atmosphere, electricity, force of wind, and such others as Mr. Henry will suggest. There is even at this time some doubt as to the influence electricity has upon health and vegetation—this could be settled in a few years, by an extended and intelligent observation. It is said that when the atmosphere is negatively influenced it is a sign of rain or snow, &c.—we certainly have all noticed the very different results from different seasons. The season of 1850, to illustrate, was unfavorable beyond precedent--shorter than any other for 20 years, very cold and backward—very wet early, and exceedingly dry late. Ordinarily the crop seems to me should not have been one-half a crop, yet we all yield a two million bale, fully four-fifths of a full crop.—How is this? Has electricity any control? Was evaporation greater in the early summer and less late, than usual? Electricity is said to be greatest in a dry time, with a clear sky, and that evaporation produces it.

I would not lend my countenance to many exploded doctrines of electrical influence, yet I cannot but believe there is some influence, and we can only arrive at it by strict trial. At all events, the above hints if carried out, will tend to amuse and instruct, as well as give increased information to the world.

Yours, with respect, JOACHIM.

Dew.

MESSRS. EDITORS.—In reading a communication, recently in your columns, on the "Formation of Dew," by Mr. J. VAN BUREN, I was forced to regret that your correspondent had not been more explicit, in giving the exact results of his experiments. It is impossible for the public to decide upon the merits of his hypothesis, without a fuller knowledge of the facts than his paper affords: they cannot tell whether his experiments were sufficiently numerous to base any theory upon them: and if they were, whether they would sustain the one he has proposed. I should like, therefore, to offer a few remarks on the subject, with a view to ascertain what is the truth, by inducing Mr. Van Buren to give the facts which support his hypothesis; and also, to remove any groundless objections to the theory of Dr. Wells, which so well explains *all* the phenomena of Dew.

In the first place, I think Mr. Van Buren's objection, not difficult to remove—that he cannot see how a cold body can give off heat to a warmer one. Dr. Wells' theory does not maintain this; the earth does not give off its heat *to* the warm air near its surface, but *through* it, to surrounding space, whose temperature is well known to be extremely low. The temperature of the air has very little to do with the earths giving or receiving heat; for it is a well established truth that rays of heat in passing through any transparent medium, affect its temperature in a very slight degree; and pass as well through a cold substance as a warm one. In proof of this, and to illustrate the way in which the earth parts with its heat, I need only to refer to the "cold-ray" experiment; in which the bulb of the thermometer in one focus of a pair of parabolic mirrors, gives off its heat to a ball of ice in the other, without affecting the temperature of the intermediate air in the slightest degree.

This must remove Mr. Van Buren's difficulty, unless, indeed, he discards Prevost's theory, that all bodies are giving off heat at all times by radiation—and, therefore, if a body does not receive as much heat from surrounding objects as it parts with, its temperature must fall. I I do not understand him to do this.

Let us now see if Mr. Van Buren's hypothesis is as little open to objections.—It is this: "In the morning, as the air is warmed by the rays of the sun, the earth becomes colder, owing to the abstraction of heat rendered latent by evaporation; this process goes on until the hottest part of the day, when evaporation is greatest, and the earth, therefore, coldest; then till the following morning; the surface, thus cooled, comes in contact with moist air, and causes it to deposit part of its moisture in the form of Dew." Further, "the reason that more Dew is found upon grass and leaves than elsewhere is that plants exhale water; this unites with the dew, and hence the appearance." Now do his own experiments, and other facts, sustain these suppositions? I think not; for the following reasons:

1st. He found the earth warmest early in the morning: is it not a reasonable inference, that there should be least dew then? We might even infer, that if the earth is warmer then than at any other time, that whatever dew had been deposited early in the night, would be evaporated by this higher temperature. Should the earth retain its low mid-day temperature, dew constantly increasing in quantity, might be the result; but as it is, (according to Mr. Van Buren's experiments) we must look elsewhere for the cause.—Would not this seem, too, to cast some doubt upon Mr. Van Buren's accuracy in experimenting?

2d. Mr. Van Buren's explanation of the greater quantity of dew on leaves, is very beautiful and ingenious; but unfortunately, there is a single fact, overlooked by Mr. V., that destroys its beauty at once, and shows it to be entirely wrong; viz: *leaves do not exude water by night*; light is absolutely necessary to enable this process to go on. Of course, this part of the hypothesis cannot stand for a moment. Leaves have more dew, because they are better radiators, just as wool, hair, or any other filamentous substance. It is no greater upon leaves than upon these substances; nor upon living leaves than dead ones. Shall we, then, abandon Dr. Well's theory for this one, which not only does not attempt to explain most of the phenomena, but fails in those it does attempt?

Let me, in conclusion, express the hope that Mr. Van Buren will set forth more fully his experiments and deductions from them, so that if they are sufficiently well founded to overthrow an erroneous theory which has so long prevailed, this may be done at once; that the

world may be relieved from one more error and make one more step towards the knowledge of all truth.

Yours, &c., J.

Marion, Ala., March, 1850.

Spent Tan-bark

It cannot be questioned that spent tan has valuable properties. No other proof is necessary than the fact that, when the roots of plants reach an old path of tan, they change their course and follow the path, running much farther than in any other direction. After the tannic acid has been abstracted, and the bark become rotten or decomposed, it is simply humus, the importance of which in soils is settled. It is an excellent manure for the garden; nothing is better for strawberries; it is also excellent for fruit trees; caution, however, should be taken in applying it very fresh, or the tannin principle will so clog the pores of the roots as to prevent them from performing their functions properly, and injure or destroy the trees.

If the bark be mixed with unleached wood ashes in the proportion of one bushel of ashes to ten of the bark, and when moistened worked up occasionally in warm weather, in a few months it will be sufficiently decomposed for use. This process has *cheapness* and *convenience* to recommend it; it is, however, slow, and for a more rapid one, we should compost the tan with a mixture of lime and common salt. Leaves, shrubs, weeds &c., when composted in alternate layers of lime in the proportion of ten inches of the former to one of the latter, will become decomposed in thirty or thirty-six hours. Tan is not quite so easily reduced, but if three bushels of *caustic* lime and one of common salt, dissolved in what water is necessary for solution, and one hundred bushels of the tan, be mixed together, decomposition will go on rapidly, and in a very short time a most valuable manure will be formed. This will be quick enough in cases where it is desired to make an immediate application. We would also add to the heap other vegetable matter with the hair and trimmings of the tan-yard, which will very much improve the quality. The salt in large quantities preserves vegetable matter, but in small is a powerful agent in decomposing.—It also destroys worms and insects, and when applied, four or six bushels to the acre, will acquit the mole of the charge so often most unjustly laid upon him of doing mischief to the crop. The elements of salt are chlorine and soda; lime, having a greater affinity for the chlorine than the soda has, decomposes the salt, and unites with the chlorine, forming chloride of lime, while the soda, being liberated, unites with the carbonic acid of the atmosphere and forms carbonate of soda—substances precisely the same in elements except the carbonic acid of the atmosphere, yet performing very different offices in agricultural economy. The comparative value of this compost depends much upon the nature and condition of the soil, and the species of plant to be benefitted by it. To some soils it is a complete specific, and supplies every ingredient which is necessary to the most abundant crops; to any soil, to some extent, it is a general manure, and as such, is a valuable fertilizer.

The *quantity* to be applied with the best economy must vary with the circumstances of each case; some lands require a larger amount, others will be equally benefitted with less; in general, however, we would use three hundred bushels to the acre, but if our supply would not allow so much, we would apply less. When *thoroughly decomposed* and the greatest *immediate* benefit is desired, it may be put in the drill, but unless thoroughly decomposed there is some danger of burning up the crop, and the better way is to plough it in spread broad-cast. The ultimate advantage will not be in the least degree lessened, but rather, in our judgement, increased. It must not be forgotten that when spread broad cast, a much larger quantity must be used *to show* itself in increased crops. The smaller application, usually made in drill, when scattered benefits the land, and in a series of years the crops, but the effect is less *obvious* to the eye, and on this account the manure is sometimes thought to be used with bad economy. This point has been called in question by high authority. The greatest benefit perhaps may be expected from the application of this compost to stiff, clayey soils, and the least to what is popularly called loamy, (composed of 40 to 70 per cent. of sand.) It acts chemically and mechanically to improve the clayey. It adds organic and saline substances, (potash. soda, common salt, lime, sulph. lime, magnesia, oxide iron, phos. acid, silica,) and at the same time converts inert matter *in the soil* into active.—Wherever used, the soil will run together less during winter rains, will be more open for the penetration of the roots of plants, and expose a greater surface of substances that abstract from the atmosphere, and retain fertilizing properties. In dry weather they will imbibe more moisture from the atmosphere, and in wet will be less retentive of water, and consequently warmer—they will be more friable, sooner and more easily worked after rains. Sandy soils do not have the organic and saline substances to the same extent as the productive loamy soils, and are wanting in them, hence great benefit will attend the application of this compost to lands of this kind. In a physical point of view, it is of great utility to these. It gives compactness, makes them more retentive of water and manures, and enables them the better to bear a drought and the scorching sun of our hot summers. It furnishes an absorbent of the ammoniacal gases in which ingredient they are invariably deficient.—This absorbent capacity is of no inconsiderable importance, and so well satisfied are we of this fact that we believe, if the fertilizing properties, that float in the air, could be seized and retained in a given piece of land, it would be a very easy matter to improve and keep it in the highest state of fertility.

If it does not suit the convenience, or if the expense on account of remoteness and cost of carriage be too great to allow the use of lime and salt in compost, the tan should by no means be thrown away. Let it be hauled to the stock-yard and stables. Here it will serve as a reservoir of nitrogenous matter and save a vast deal that would otherwise escape. Exposed to wind, sun, and rains, as the most of our yards are, the manures lose probably one half of their virtue. To retain this, tan is one of the very best organic substances, that can be used. It will also ferment and become fit for application in the course of a summer, and until our yards are differently arranged, it is questionable whether a better use can be made of spent tan-bark than to deposit it in them.

Messrs. Editors:—I see there is an interesting discussion going on in your paper, on the subject of woods burning, or as one says in favor of the *ash* and *humus* theories. I do not desire to enter into the melee, although it seems to be a "free fight." But "Pry" is surely misunderstood by the opposite party, or myself, for, unless I am greatly mistaken, he *is not* in favor of the destruction of *all* the vegetable matter in the soil nor has he admitted that it was possible, by merely burning the woods. It seems to me he is in favor of a due proportion of both ash and humus—the true theory no doubt, and the one which Pendleton embraces in the conclusion of his article. But, as before stated, I am not disposed to enter into the fight, yet, with your permission, Messrs. Editors, I will throw in a weapon (not my own) occasionally, for the use of those who may choose to take it up.

The first I shall offer is from Prof. Johnson, on

Barren or Unfruitful Soils.

"Soils are unfruitful or altogether barren, either when they contain too little of one or more of the inorganic constituents of plants, or when some substance is present in them in such quantity as to become hurtful or poisonous to vegetation. The presence of sulphate of iron in the subsoil just described is an illustration of the latter fact—in what way the *deficiency* of certain substances really does affect the agricultural capabilities of the soil, will appear from the following analysis:—

	1 Soil.	1 Subsoil.	2
Silica & Quarts Sand	70.576—	95.190	61.576
Alumina	1.050—	2.520	0.450
Oxides of Iron	0.252—	1.460	0.524
Oixide of Manganese	trace—	0.048	trace
Lime	do. —	0.336	0.320
Magnesia	0.012—	0.125	0.130
Potash	trace—	0.072	trace
Soda	do.	0.180	do.
Phosphoric Acid	do.	0.034	do.
Sulphuric "	do.	0.020	do.
Carbonic "	—	—	—
Chlorine	trace—	0.015	trace
Humic Acid	11.910—	—	11.470
Insoluble Humus	16.200—	—	25.530
Water	—	—	—
	100	100	100

	3	4
Silica & Quartz Sand	96.000	77.780
Alumina	0.500	9.490
Oxides of Iron	2.000	5.800
Oxides of Manganese	trace	0.105
Lime	0.001	0.866
Magnesia	trace	0.728
Potash	do.	trace
Soda	do.	do.
Phosphoric Acid	do.	0.003

Sulphuric "	do.	trace
Carbonic "	—	0.200
Chlorine.....	trace	trace
Humic Acid.....	0.200	0.732
Insoluble Humus.....	1.299	0.200
Water.....	—	4.096
	100	100

Each of these analyses is deserving of attention.

1°. That the barrenness of the moor-land soils (1 and 2) is to be attributed to their deficiency in the numerous substances of which they contain only traces, may almost be said to be proved by the fact—one long recognised and acknowledged on many of our own moor-lands and peaty soils—that when dressed with a covering of the subsoil, they become capable of successful cultivation. The analysis of the subsoil in the second column shows that it contains *all those mineral constituents in which the soil itself is defective*—and to the effect of these, therefore, the improvement produced upon the soil by bringing it to the surface, is altogether to be attributed.

2°. The sandy soil, No. 3, is evidently barren for the same reason as the moor land soils, 1 and 2. The soil No. 4, rests on limestone, and was mixed with 7 per cent. of limestone gravel, and contains a great number of the substances which plants require—but its unfruitfulness is to be ascribed to the want of potash and soda, of sulphuric acid, and of chlorine. Wood ashes and a mixture of common salt, with gypsum or sulphate of soda, would probably have remedied these defects.

3°. Among the fertile soils to which I recently directed your attention, (p 414), was one from Belgium, in which the proportion of organic matter was less than half a per cent. of its whole weight. In the above table, on the other hand, we have two nearly barren soils, containing each 11 per cent. of humic acid, besides a much larger proportion of insoluble organic matter. It is obvious, therefore, that the fertility of a soil is not dependant upon its containing this or that proportion of vegetable matter, either in a soluble or an insoluble form. It is certainly true that many very fertile soils do contain a considerable quantity of organic matter, in a form in which it may readily yield nourishment to the roots of plants. Yet, such soils are not fertile merely in consequence of the presence of this organic matter, as a source of *organic* food to the plant. It may be present, and yet, the soils, like those above mentioned, may remain barren. Where soils become fertile apparently by the long accumulation of such vegetable matter in the soil, it is not *merely* because of the increase of purely organic substances, such as the humic and ulmic acids, but, because, as I have already had occasion to mention to you, the decaying vegetable matter which produces them contains, *also*, and yields to the soil, a considerable abundance of some of those inorganic substances which plants necessarily require. The organic matter is an indication of their presence in such soils. But they may be present without the organic matter. They may either be duly proportioned in the soil by nature—or they may be artificially mixed with it, and then this use of the organic matter may be dispensed with. It is of more importance to bear this in mind, because, not only vegetable physiologists, but some zealous chemists also, have laid great stress upon the quantity of soluble and insoluble organic matter contained in a soil, and have been led to consider it as a safe index of the relative fertility of different soils.

The history of science shows, by many examples, that those men who adopt extreme views,—who attempt to explain all phenomena of a given kind, by reference to a single specific cause—have ever been of very great use in the advancement of *certain* knowledge. Their arguments, whether well or ill founded, lead to discussion, to further investigation, to the discovery of exceptional cases, and, finally, to the general adoption of modified views which recognise the action of each special case in certain special cases, but all in subordination to some more general principle.

Thus, if some ascribe the fertility of the soil to the presence of the alkalies in great abundance, others to that of the phosphates, others to that of lime, others to that of alumina, and others, finally, to that of vegetable matter in a soluble state—all these extreme opinions are reconciled, and their partial truths recognised, in one general principle, that *a soil to be fertile, must contain all the substances which the plant we desire to grow can only obtain from the soil, and in such abundance as readily to supply all its wants; while at the same time it must contain nothing hurtful to vegetable life.* I.

Relative Weight of Corn and Cob. The proportion of corn to the cob, in different varieties, is a matter of great importance, and should be duly regarded in selecting a kind for cultivation. The point should be aimed at in this case, as in animals for fattening—the least proportion of offal to the valuable parts.

E. M. Bradley gives the "Rural New Yorker" the results of an experiment on this subject. The varieties of corn were the Dutton, (yellow twelve-rowed,) the Vermont, (yellow eight-rowed,) and the Red-blaze, (white eight-rowed.) Samples of each of these kinds were husked the first week in October, thoroughly dried; and then carefully weighed and shelled, showing the following results:—

75 lbs. of ears of Dutton gave of cobs, 15 lbs. 12 ozs., of corn, 59 lbs. 7 ozs.

75 lbs. of ears of Vermont corn gave of cobs, 15 lbs. 12 ozs., of corn, 59 lbs. 4 ozs.

75 lbs. of ears of Red blaze gave of cobs, 15 lbs. 11 ozs., of corn, 59 lbs. 5 ozs.

The corn was measured before it was shelled. Of the Dutton, there was two bushels and four quarts; of the Vermont two bushels, and of the Red blaze two bushels and two quarts.

Thus the two latter varieties yielded 8 1-2 per cent. more corn in proportion to the weight of cob than the Dutton, and considerably more in proportion to the bulk. There is another disadvantage connected with large cobs, which should be noticed. They are much longer in drying, and consequently the grain is much more likely to mould and spoil, either in the crib, or while it is in shock.

Poisonous Earthenware.--At a thanksgiving dinner in New England some weeks ago, a number of individuals were poisoned by eating of a chicken pie.—Seventeen of the party were attacked with severe griping pains in the bowels, accompanied with profuse diarrhœa.—The poisonous effects of the pie are attributed to the dish in which the pie was baked—a yellow earthen plate—the enamel of which, was composed of lead, cobalt and clay, which are very poisonous in their effects.—*Exchange.*

A short Plea in behalf of Fruits and Flowers.

Spring has again come, and with it, the season of sowing and transplanting—and shall we fail to improve it? Is it necessary for us to urge upon you, dear readers, the importance of improving your farms and adorning your homes, by cultivating fruits and flowers? It would seem not; if the united and urgent plea of one's family, comfort and interest might be listened to. Nevertheless, we exhort, we entreat, that for their sakes at least, you make a begining of some sort, if you have not done so already. When spring opens, hitch up and start off 10, 20, or 40 miles, if need be, to some nursery, or more favored friend, and buy, beg or borrow, at some rate, currant, gooseberry and raspberry bushes, plum, cherry and apple sprouts enough for a start! And while there get a rose bush and some "posey roots" also—and then put them out all right, and take care of them as valuable additions to the farm, as beautiful ornaments to a precious home. O, man! whoever thou art, that enjoys that boon—if a true man, thou wilt cherish thy home—thou would'st have it the garner of whatever is "pure, lovely, and of good report;" so shall it be to thee, Earth's dearest spot, Heaven's truest type!—*Iowa Farmer.*

Cleansing or Renovating Brine.—To five gallons of brine, add one egg, broken and stirred in. and then bring to a gentle boiling and skim and cool for use. Saltpetre added to brine, at the rate of two to four ounces to the 100 pounds of meat, gives it a fine, reddish color. A little brown sugar adds to the flavor of beef and pork particularly for smoking, besides possesing an antiseptic quality.

Fried Potatoes.—This good old-fashioned dish, which used to delight us in boyhood, has gone so much out of use, that the following directions for preparing it may not be amiss: Take good sound potatoes and pare off the skins, cut them in slices; have a pan of hot lard ready, immerse them in it, and fry them over a brisk fire until a portion of the batch becomes partially crisped;

drain off the fat through a colander, and serve them as hot as possible, seasoned with a little salt only. They must be eaten hot, or they are worthless. Sweet potatoes served in the same way are delicious.

Fingerville, S. C., Jan. 4, 1851.

Messrs. Editors:—Enclosed I send you one dollar in payment of my subscription to the Farmer and Planter for the present year, 1851.

I wish to hear from you, or some of your correspondents, as to the best mode of applying leached tan-bark as a manure, or whether it can be made profitable in any way. If leached bark be useful at all, what kind of soil should it be applied to—in what quantities—at what season of the year—and how it should be applied. I have thrown it in the lots where my stock run as an absorbent, but the fresh bark does not decompose fast enough for speed in making manure.—I have now commenced depositing large quantities of the bark in pits, and empty my lime vats into the same, thinking probably all the remaining strength of the lime would be taken up, and cause decomposition to commence early, and thereby save the remnant of lime thus thrown in.

Respectfully, yours, G. Cannon.

*** Refer to page 28.—Eds.

Corn Planting—What is the Proper Distance?

Messrs. Editors:—I enclose my subscription money, which is one dollar, and I think that every farmer in the district should take your paper, and ought not to be so blind to his own interest as to patronize Northern papers.

I should like to know what distance you think corn ought to be put apart. I once stated in the Mountaineer what I thought would be proper: In old land five feet, in drill; tolerably good land, four-and-a-half by four feet. I don't allude to bottom or rich land. Your grand-father was the man that informed me. After writing the article for the Mountaineer, a gentleman came to me and contended that I was entirely wrong, that five feet would never do, one stalk in a hill. I told him if he did not like the plan not to follow it. He did try it, however, and after his crop was made acknowledged to me that he was wrong and I was right. He made larger corn than any of his neighbors. Most persons think they know how to make corn, and regard any instructions offered them on the subject as an insult.—But if they would give it the proper distance, and tend it a little better, there would be thousands of barrels more made in Greenville than is now.

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Yours, truly, W. B******.

Greenville District, S. C, 1851.

Remarks.—We take the liberty of publishing the above letter of our old neighbor and friend, as it may induce others to give us their opinions on the subject in question. We presume however that most practical corn planters at the south will agree with him in giving corn good distance, even as much as recommended.

In the Northern States, where corn grows from four to eight feet high, a greater yield is realized by a close stand. Planting even as near as three feet each way, and three or four stalks in the hill, when the land is in good condition, is not considered too thick. This allows from two to three square feet of ground to each plant, which will not do with our tall southern corn, however. On our best upland, 3 by 3, or 4 by 2 feet *one* stalk in a hill, allowing 8 or 9 square feet to each stalk, is as close as we may prudently venture. On land capable of yielding only two barrels of corn to the acre, (and we regret to admit a great deal such is cultivated in our State,) 6 by 4, or 5 by 5, allowing to each stalk 24 or 25 square feet is near enough. We prefer the drill system, with the space between hills at least one third less than the width of the rows.

Let the land be well prepared, and in proper time, not forgetting the use of the subsoil plough either in the preparation or early culture of the crop. Plant early; cultivate rapidly; lay-by early; and much more corn will be made than is by our half breaking, scratching, slow and slovenly manner of cultivating.

On all stiff land, that is liable to run to-gether and become close and compact, the effect of our heavy spring rains, we advise the use of the subsoil plow in the first working of the corn. To illustrate the value of this practice, (pardon our vanity) we introduce a circumstance that was not long since related to us, by William Wiley Esq., of Franklin Co., Ga. In giving us a verbal account of his mode of preparing land for corn, and also the manner of cultivation, he stated, among many other interesting facts, that last year the first plowing, given his corn on red, stiff land, was with what is usually called the one-horse subsoil plow, made from thick wagon-tire iron, in the form of the wide pointed gopher.—The season of last year, as all know, was very dry, and almost fatal to many crops throughout our country—not so with Mr. W.'s, however. The difference in the appearance of his fields and others on the road, was so striking, as to draw many remarks from travellers, such as the following: "Why, sir, you've had plenty of rain here." "No, sir, I have had no more than others; I believe hardly so much." "How is this? when other up-land corn is burnt up to the ear, and above, yours is green to the ground." "That is very easily accounted for; I take the Farmer and Planter, which, last spring, advised me to plow my land deep in anticipation of a drought—I have done so, and you see the result. The owners of the parched up fields you have seen, don't believe in book farming. They know better than the book. It would insult them to advise them to take an agricultural paper."

We would remark to our old friend, altho' we have not published the concluding part of his letter, we would not have him think we were the less pleased at the intelligence communicated—on the contrary, we were gratified, and congratulate him, and every other good man, of our native district that it is so.—Eds.

Wash for Apple Trees.—Dissolve two pounds of potash in a pail of water—apply with a brush.

Capacity of a Soil to endure constant Cultivation.

The capacity of a soil to support, for a series of years, the cultivated crops, depends mainly upon the following conditions:

1. Upon the quantity of water it can imbibe or retain, during the seasons which would be considered dry.

2. On the amount of nutricious matter which may be introduced without waste.

A supply of water must ever be regarded as one of the most essential things in the cultivation of all crops. This Water must be retained long enough to act upon the nutriment in the soil, or that part through which it usually ramifies.—The quantity of nutriment which may be condensed in a soil, depends too much upon its retentiveness for water; if it is too porous, if it is speedily washed out and lost, if too close, it is not received into it, but is lost, by exhalation, from the surface. In cultivation then, we seek to modify both extremes; the object, in all cases, being to secure that texture, which shall give it certain relations to water, which experience and reason have proved to be the best.—*American Journal of Agriculture.*

To Clean Silks.—Take a quarter of a pound of soap, a teaspoonful of brandy, and a pint of gin; mix all well together. With a sponge or flannel spread the mixture on each side of the silk without creasing it; wash it in two or three waters, and iron on the wrong side. Thus treated, it will look as well as new.—*Ex.*

A fine Hash.—Take any game or poultry that you have—you may mix several kinds together—some sausages, of the best sort, will be an improvement. Chop all together, and mix with it, bread crumbs, onions, and the yolks of two or three hard-boiled eggs. Put it into a saucepan with a proportionate piece of butter, rolled in flour. Moisten it both with gravy or warm water, and let it stew gently for half an hour.—*Ex.*

Valuable Washing Recipe.—Add one gill of alcohol to a gallon of soft soap, and mix intimately. Apply the soap to the clothes in the usual way, and let them soak some hours in the suds; then rinse out with very little labor of rubbing.—We obtained the above from Mr. Cornish, steward of the Insane Hospital at Hartford, who says there is not an inmate of the establishment but what has reason enough to appreciate its value.

A Burn or Scald.—If it be but skin deep immediately plunge the part in cold water; keep it in an hour, if not well before. Perhaps longer.

Frying Fresh Fish.—Never put them into cold fat. Let the lard, butter, or oil be first heated to a degree just short of burning, and then plunge in the fish—the greater the quantity of fat, and the quicker the fish are cooked, the better they will be, as they give off their own fat instead of absorbing that in which they are cooked.

Source of the Fertility of Lands.

MESSRS EDITORS:—Broomsedge is in the field again, a most convincing proof of his great tenacity of life, and extraordinary power of vitality. He says he is not disposed to make a Bermuda grass controversy out of this, but he appears determined to have the last lick, at least, and if he replies again, he will, in all probability, have attained his end. I certainly should not have appeared in your columns, at this time, had he not imposed upon me the absolute necessity of correcting certain palpable misconstructions, which exposed my position to unmerited ridicule, and which, as I shall proceed to show, were not justified by the language used.

He says "if Pry did not mean to cite the practices of the Aborigines for the fertility of the Western lands, as proof of his theory, what was the use of introducing them." In reply I admit the fact.—I did cite the *practices* of the Aborigines for the fertility of the Western lands.—But if Broomsedge had read his first article as *carefully* as I have, he would not have omitted that word *authority* in his reply to Pry. I trust he will be at no loss in recognizing a palpable difference between citing the practices of the Aborigines as *authority on agricultural subjects*, and simply citing them for the fertility of the Western lands. The word authority implies the relation of means to an end, and conveys the idea that they fire the woods with a view to an improvement of the soil, which I distinctly disclaimed at the outset. Had I been speaking of the unsurpassed fertility of the Islands on the coast of Peru, and said that it had resulted, in an eminent degree, from the practices of sea fowls roosting thereon for centuries, would he have been justified in accusing me of citing the *authority* of sea gulls and Canary birds on agricultural subjects! And yet the cases are precisely analagous.

I have not been able to perceive in what way Broomsedge could have expected to make capital out of this often repeated sentiment. All I said, or intended to say, was that the Western lands had been fertilized by the process, a position which can neither be strengthened or weakened by any explanations that could be offered, as to the objects of the natives in firing the woods.

Again, he says, "Pry need not get so warm, he did say "yet the astonishing yield of *all* the Western lands &c. &c." "Now if Pry had read his article as carefully as we have, he would not have omited that *all* in his reply to Broomsedge." As this is simply a matter of verbal criticism, I leave it to the enlightened readers of your paper to determine, whether the term *Western lands*, according to common acceptation and the rules of grammar, means the whole, or only a part thereof.

He next proceeds as follows: "Pry says lands cannot be made rich by the largest amount of inorganic manure *simply*, and in the next breath tells us that the value of the soil depends almost entirely on the amount of its inorganic manure. Where these exist in sufficient quantity, the organic materials soon follow, as a natural consequence." And adds: "verily this is something new to us; *no use for organic matter*." And then introduces a series of analyses, from Payen and Hitchcock, apparently to prove that organic manure is really a necessary constituent of soils.

As respects the assumption, that the value of a soil depends almost entirely on the amount of its inorganic manure, I hold it to be incontrovertible. No one, as far as I know, has ever denied but that if a soil were wholly deficient in these materials, it would be as a matter of necessity, a caput mortuum, without the power of self renovation, and incapable of sustaining vegetable life.

Whilst the proof is irresistible, that these materials unaided by the slightest traces of organic manure, have perfected the growth, and even the maturity of the seeds of tobacco, barley and buckwheat, (see Bousingault, page, 364.) It is also universally admitted that all soils have been formed from the decomposition of the primitive rocks. That soil necessarily preceded vegetation. And consequently that the first plants grew without the aid of organic manure. Facts which go to establish the conclusion, that mineral manures are not only primary, but of paramount importance in the composition of soils, whilst the organic materials are subsequent and of secondary consideration. In confirmation of these views I quote from Bakewells geology, (page 388.) "By a wise provision of the author of nature, it is ordained that those rocks which decompose rapidly, are those which form the most fertile soils, for the quality of soils depends on the nature of the rocks from which they were formed." This theory as to the origin of soils, sustained, as it unquestionably is, by the highest authorities of the age, is at once decisive of the question at issue, for it not only establishes the fact that soils have resulted from the decomposition of rocks, but also accounts in the clearest manner for the different degrees of fertility in the various regions of the earth. Where the rocks that yield the greatest amount and variety of those saline substances that impart fertility to soils, abound most, an extraordinary richness and durability of the land coexist, and *vice versa*. Nor is the assumption less fully proved, by a reference to general experience and common observation. The price of land throughout the United States is always highest in those regions where mineral manures are most abundant, if in right proportions, and for the plainest of reasons, such lands are uniformly fertile, and when run down by improvident tillage, easily reclaimed. But in soils greatly deficient in inorganic manure, when once impoverished from the above cause, their renovation, as we all know, in this section of country, is a work of very serious difficulty. In the first instance all that is necessary, is a resupply of organic manure, a matter of remarkable facility, in soils abundant in mineral manure. But in the other case, and where the lands are deficient in both, the prospect is discouraging.

The lands in the valley of Virginia, are known to be eminently rich in mineral manure, yet although very remote from market, they are said to rate at from one hundred, to one hundred and twenty dollars per acre, whilst those on the other side of the Blue-ridge, both in that State, and North Carolina, seldom command one-fourth of the sum stated. In East-Tennessee, though still further from market, lands have ranged, for thirty years, at from ten to thirty dollars per acre. Will it be argued that the great value of these lands is owing for the most part, to the presence of organic manure? this would be putting the cart before the horse. It would be mistaking the effect for the cause. In a practical point of view, no one will pretend to deny, but that their uncommon productiveness, is owing to the direct agency of both manures. But philosophically considered, the mineral manures are the true measure of their value. The enormous fertility of the lands in question, has resulted from the causes set forth in the extract from Bakewell. These regions abound in rocks whose decomposition has supplied the soil with the greatest amount and variety, of inorganic materials. Whilst the organic, of which they have an abundant supply, has followed as a natural consequence, and is an effect, rather than a cause of fertility.

But Broomsedge in his comments upon the high estimate I place upon the inorganic manures, introduces the following remarkable expression: "verily this is someting new to us, *no use for organic manures*. The world is running mad upon organic manures, surely." Yes the world is running mad, truly, but it will be found to be a madness that has method in it. But whence did he obtain his authority for the sentiment. The language used by me on that subject, was clear and unequivocal, and was as follows: "It is admitted on all sides, that the fertility of a soil depends on the presence of these ingredients (viz: organic and inorganic manures). And that the maximum of production can only be attained, when they exist in due proportion." Can it be that he inferred it from the following sentiment: "A soil cannot be made rich by the largest amount of inorganic manure *simply*." The word *simply*, in this connection would seem to be of interesting significance. Next follows a series of analyses to prove nothing more than that the best of soils, have been found, in all cases, to contain more or less organic manure, a fact, so far as my observation goes, no one has ever attempted to controvert.

There are other points of minor consideration, which I should have examined, but from an unwillingness to intrude further on your columns, not the least interesting of which is, the objection to burning the woods on the ground that the ashes are liable to be blown to the D—l. Verily, this is hard to beat. Had he simply insisted on the authority of his man Pat, that they were likely to be blown away, I could have argued with some plausibility, that if a blast sent them in one direction, another, when the wind had changed its course, might bring them back again. But if blown to h—l, I apprehend they will be deposited below the reach of subsoil plowing, and lost forever to the interests of agriculture.

But I must take leave of Broomsedge, at least, for a time. Other competitors have made their appearance in the field, which warns me of the necessity of reserving a part of my ammunition for the unequal contest that has been forced

upon me. I am now, as heretofore, a zealous advocate of the mineral manures. I am now, as heretofore, an advocate of the policy of burning the woods. And I am now, and always have been, an uncompromising advocate of organic manure, and regard it as my principal resource in this section of the country.

To reconcile these views—which, to the optics of some of your contribntors, no doubt, may appear contradictory—to show that firing the woods has had no tendency to diminish the vegetable mould, or organic manure of the soil, and to explain the circumstances under which I deem it improper to precipitate the destruction of vegetable matter by fire, will constitute the "burthen of my song," in my reply to the elaborate communication of "Pendleton" in your last number. PRY.

Pendleton, March 12, 1851.

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